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EXAMINER	
PIZIALI, JEFFREY J	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/669,031	**Applicant(s)** OKITA, MASAYA	
	Examiner Jeff Piziali	**Art Unit** 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3,4,7,10,15 and 20-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3,4,7,10,15 and 20-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/115,018.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. ***09/115,018***, filed on ***14 July 1998***.

2. Applicant states that this application is a continuation application of the prior-filed application ***09/115,018*** (*see the replacement paragraph provided on 30 November 2009*).

A continuation or divisional application cannot include new matter. Applicant is required to change the relationship (*continuation or divisional application*) to continuation-in-part because this application contains the following matter not disclosed in the prior-filed application:

The original disclosure of the prior-filed application, ***Application No. 09/801,098***, does not support the showing of the newly drawn applied voltage, absolute value of applied voltage, and optical transmittance waveforms, as presently illustrated in Figure 2.

The presently illustrated Figure 2 is entirely different in appearance from the originally presented Figure 2 (*as originally submitted in* ***Application No. 09/801,098***), introducing a completely new (*to the present disclosure*) method of driving a conventional nematic liquid crystal.

The applicant defends this alteration to Figure 2 in the "*Comments Before First Office Action*" (*submitted on 23 September 2003*) by saying, *"Figure 2 now corresponds to Figure 2 in*

the originally filed parent application ***Serial No. 09/115,018****, filed July 14, 1998"* (see Page 2 of the "Comments Before First Office Action").

However, Section 201.07 of the MPEP states, *"The disclosure presented in the continuation* ***must be the same as that of the original application****; i.e., the continuation should not include anything which would constitute new matter if inserted in the original application."*

In this case, because the instant application is seeking to be a Continuation Application of ***Application No. 09/801,098****;* ***Application No. 09/801,098*** (*not* ***Application No. 09/115,018***) constitutes *"the original application."*

Moreover, it was explained in the Final Office Action for **Application No. 09/801,098**, that such an alteration to Figure 2 introduces new matter into the drawings

(*see the bottom of Page 2 of the Final Office Action mailed 21 April 2003*).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. *Claims 3, 4, 7, 10, 15, and 20-25* are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Hiroki et al (US 5,200,846 A)*** in view of ***Mase et al (US 5,337,171 A)*** and ***Takemura (US 7,554,616 B1)***.

Please note: Claim order has been rearranged in the Office action to better reflect the order of specificity of the pending claims (*going from broadest to more specific claim language*).

Regarding claim 22, ***Hiroki*** discloses an image display method for a liquid crystal display device [*e.g., Fig. 10*] including

a matrix liquid crystal panel [*e.g., Figs. 10, 12, 13: 123 matrix*] with

a nematic liquid crystal [*e.g., see Column 3, Line 68; Column 9, Line 16*],

consisting of the steps of:

applying a first absolute voltage [*e.g., Fig. 9: Liquid Crystal Potential =* $V_{DD} + V_{SS}$] corresponding to image data [*e.g., image gradation level*] to the nematic liquid crystal during a first time period [*e.g., Fig. 9: write-in unit time t, 325*] in a unit period [*e.g., Fig. 9: 1 Frame*]; and

applying a second absolute voltage [*e.g., Fig. 9: Liquid Crystal Potential = electrical ground, GND*] having a potential [*e.g., zero volts*] and that does not correspond to the image data to the nematic liquid crystal in a second time period [*e.g., Fig. 9: Frame - t = non-write-in time*] different from the first time period in the unit period,

wherein the matrix liquid crystal panel is an active matrix liquid crystal panel [*e.g., Fig. 10: via 113, 122*] (*see the entire document, including Column 2, Line 40 - Column 4, Line 5; Column 5, Line 40 - Column 11, Line 56*).

Should it be shown that ***Hiroki*** discloses a first absolute voltage, as instantly claimed, with insufficient specificity:

Mase discloses a liquid crystal display device [*e.g., Fig. 12*] that includes

a twisted nematic liquid crystal [*e.g., Column 1, Lines 15-35; Column 13, Line 39*],

two electrodes confining the nematic liquid crystal [*e.g., Fig. 12: 16, 17*],

a pair of polarizing plates sandwiching the electrodes [*e.g., Column 15, Lines 20-30; Column 17, Lines 10-20*]; wherein

a unit period being less than or equal to eight milliseconds [*e.g., Column 14, Line 47*]; and wherein

a first absolute voltage [*e.g., Fig. 14: (+), (-)*] consists of

a first positive voltage [*e.g., +20 volts -- Column 18, Line 60*] and

a first negative voltage [*e.g., -20 volts -- Column 18, Line 60*] and

the sum of the first positive voltage and the first negative voltage in the unit period is zero volts (*see the entire document, including Column 17, Line 45 - Column 19, Line 45*).

Should it be shown that both ***Hiroki*** and ***Mase*** disclose a first absolute voltage, as instantly claimed, with insufficient specificity:

Takemura discloses that it was well known and commonly understood at the time of invention to replace a counter/opposing electrode offset voltage level with a zero/ground voltage level (*see the entire document, including Fig. 3; Column 2, Lines 5-30*).

Hiroki, ***Mase***, and ***Takemura*** are all analogous art, because they are from the shared inventive field of driving liquid crystal displays.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use ***Mase's*** polarizing plate arrangement to form ***Hiroki's*** liquid crystal element [*e.g., Fig. 10: 115*] -- so as to form a commercially popular transmissive LCD;

use ***Mase's*** sub-8 millisecond frame period as ***Hiroki's*** frame period [*e.g., Fig. 9: Frame*] -- so as to provide a quick frame rate resulting in a smooth display of full motion video;

use ***Mase's*** ±20 volt positive/negative voltages as ***Hiroki's*** positive/negative voltages [*e.g., Fig. 9:* V_{DD} *&* V_{SS}] -- so as to prevent deterioration of the LCD via polarity reversal and drive the pixel with appropriate voltage levels; and

use ***Takemura's*** zero voltage opposed electrode level as ***Hiroki's*** opposed electrode voltage level [*e.g., Fig. 9:opposed electrode*] -- so as to provide a well known and commonly understood opposed electrode level voltage substitution.

It would have been obvious to one of ordinary skill in the art at the time of invention, because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp (*i.e., using polarizers, driving the display at a fast frame rate; reversing the polarity of drive signals; and applying a zero/ground voltage level to the opposing electrode of the LCD pixel*). If this leads to the anticipated success, it is likely the product is not of innovation but of ordinary skill and common sense.

Regarding claim 33, ***Hiroki*** discloses said nematic liquid crystal is a twisted nematic liquid crystal [*e.g., see Column 3, Line 68; Column 9, Line 16*].

Regarding claim 23, this claim is rejected by the reasoning applied in rejecting claim 22; furthermore, ***Hiroki*** discloses a method for driving a nematic liquid crystal [*e.g., Fig. 10: 115*] in a liquid crystal display device [*e.g., Fig. 10*] that includes

the nematic liquid crystal [*e.g., see Column 3, Line 68; Column 9, Line 16*],

two electrodes [*e.g., Fig. 10: 116, 117*] confining the nematic liquid crystal,

a pair of polarizing plates [*e.g., inherent for a transmissive LCD*] sandwiching the electrodes and

a matrix liquid crystal panel [*e.g., Figs. 10, 12, 13: 123 matrix*] with the nematic liquid crystal,

consisting of the steps of:

applying a first absolute voltage [*e.g., Fig. 9: Liquid Crystal Potential* = $V_{DD} + V_{SS}$] corresponding to image data [*e.g., image gradation level*] to the nematic liquid crystal during a first time period [*e.g., Fig. 9: write-in unit time t, 325*] in a unit period [*e.g., Fig. 9: 1 Frame*]; and

applying a second absolute voltage [*e.g., Fig. 9: Liquid Crystal Potential = electrical ground, GND*] not corresponding to the image data to the nematic liquid crystal during a second separate time period [*e.g., Fig. 9: Frame - t = non-write-in time*] in the unit period,

wherein the unit period includes a separate first input of the first absolute voltage,

a second input of the second absolute voltage and

the optical transmittance of the nematic liquid crystal returns to or remains at an original level during the unit period [*e.g., Fig. 9: Electrical Potential Applied to a Pixel starts and ends*

at the same voltage level for each frame; see also Fig. 2: applied voltage versus LC transmissivity] and

the matrix liquid crystal panel is an active matrix liquid crystal panel [*e.g., Fig. 10: via 113, 122*] (*see the entire document, including Column 2, Line 40 - Column 4, Line 5; Column 5, Line 40 - Column 11, Line 56*).

Should it be shown that ***Hiroki*** discloses a first absolute voltage, as instantly claimed, with insufficient specificity:

Mase discloses a liquid crystal display device [*e.g., Fig. 12*] that includes

a twisted nematic liquid crystal [*e.g., Column 1, Lines 15-35; Column 13, Line 39*],

two electrodes confining the nematic liquid crystal [*e.g., Fig. 12: 16, 17*],

a pair of polarizing plates sandwiching the electrodes [*e.g., Column 15, Lines 20-30; Column 17, Lines 10-20*]; wherein

a unit period being less than or equal to eight milliseconds [*e.g., Column 14, Line 47*]; and wherein

a first absolute voltage [*e.g., Fig. 14: (+), (-)*] consists of

a first positive voltage [*e.g., +20 volts -- Column 18, Line 60*] and

a first negative voltage [*e.g., -20 volts -- Column 18, Line 60*] and

the sum of the first positive voltage and the first negative voltage in the unit period is zero volts (*see the entire document, including Column 17, Line 45 - Column 19, Line 45*).

Should it be shown that both ***Hiroki*** and ***Mase*** disclose a first absolute voltage, as instantly claimed, with insufficient specificity:

Takemura discloses that it was well known and commonly understood at the time of invention to replace a counter/opposing electrode offset voltage level with a zero/ground voltage level (*see the entire document, including Fig. 3; Column 2, Lines 5-30*).

Hiroki, ***Mase***, and ***Takemura*** are all analogous art, because they are from the shared inventive field of driving liquid crystal displays.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use ***Mase's*** polarizing plate arrangement to form ***Hiroki's*** liquid crystal element [*e.g., Fig. 10: 115*] -- so as to form a commercially popular transmissive LCD;

use ***Mase's*** sub-8 millisecond frame period as ***Hiroki's*** frame period [*e.g., Fig. 9: Frame*] -- so as to provide a quick frame rate resulting in a smooth display of full motion video;

use ***Mase's*** ±20 volt positive/negative voltages as ***Hiroki's*** positive/negative voltages [*e.g., Fig. 9:V_{DD} & V_{SS}*] -- so as to prevent deterioration of the LCD via polarity reversal and drive the pixel with appropriate voltage levels; and

use ***Takemura's*** zero voltage opposed electrode level as ***Hiroki's*** opposed electrode voltage level [*e.g., Fig. 9:opposed electrode*] -- so as to provide a well known and commonly understood opposed electrode level voltage substitution.

It would have been obvious to one of ordinary skill in the art at the time of invention, because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp (*i.e., using polarizers, driving the display at a fast frame rate; reversing the*

polarity of drive signals; and applying a zero/ground voltage level to the opposing electrode of the LCD pixel). If this leads to the anticipated success, it is likely the product is not of innovation but of ordinary skill and common sense.

Regarding claim 15, ***Mase*** discloses the unit period is less than or equal to eight milliseconds [*e.g., Column 14, Line 47*].

Regarding claim 24, ***Mase*** discloses the first absolute voltage consists of

a first positive voltage [*e.g., +20 volts -- Column 18, Line 60*] and

a first negative voltage [*e.g., -20 volts -- Column 18, Line 60*] and

the sum of the first positive voltage and the first negative voltage in the unit period is zero volts [*e.g., 20 - 20 = 0*].

Regarding claim 34, ***Hiroki*** discloses said nematic liquid crystal is a twisted nematic liquid crystal [*e.g., see Column 3, Line 68; Column 9, Line 16*].

Regarding claim 20, this claim is rejected by the reasoning applied in rejecting claims 22 and 23; furthermore, ***Hiroki*** discloses a method for driving a nematic liquid crystal [*e.g., Fig. 10: 115*] in a liquid crystal display device [*e.g., Fig. 10*] comprising

the nematic liquid crystal [*e.g., see Column 3, Line 68; Column 9, Line 16*],

two electrodes [*e.g., Fig. 10: 116, 117*] sandwiching the nematic liquid crystal,

two polarizing plates [*e.g., inherent for a transmissive LCD*] sandwiching the two electrodes and

a matrix liquid crystal panel [*e.g., Figs. 10, 12, 13: 123 matrix*] with the nematic liquid crystal,

consisting of the steps of:

applying a first voltage [*e.g., Fig. 9: Liquid Crystal Potential* = V_{DD} + V_{SS}] corresponding to image data [*e.g., image gradation level*] to the nematic liquid crystal during a first time period [*e.g., Fig. 9: write-in unit time t, 325*] in a unit period [*e.g., Fig. 9: 1 Frame*]; and

applying a second voltage [*e.g., Fig. 9: Liquid Crystal Potential = electrical ground, GND*] that does not correspond to the image data to the nematic liquid crystal during a second time period [*e.g., Fig. 9: Frame - t = non-write-in time*] in the unit period,

wherein the unit period consists of the first time period and the second time period, and

the optical transmittance of the nematic liquid crystal changes from an initial level corresponding to the second voltage to a level corresponding to the image data during the first time period and

changes from the level corresponding to the image data to the initial level corresponding to the second voltage during the second time period [*e.g., Fig. 9: wherein Electrical Potential Applied to a Pixel starts and ends at the same voltage level for each frame; see also Fig. 2: applied voltage versus LC transmissivity*], and

the matrix liquid crystal panel is an active matrix liquid crystal panel [*e.g., Fig. 10: via 113, 122*] (*see the entire document, including Column 2, Line 40 - Column 4, Line 5; Column 5, Line 40 - Column 11, Line 56*).

Should it be shown that ***Hiroki*** discloses a first absolute voltage, as instantly claimed, with insufficient specificity:

Mase discloses a liquid crystal display device [*e.g., Fig. 12*] that includes

a twisted nematic liquid crystal [*e.g., Column 1, Lines 15-35; Column 13, Line 39*],

two electrodes confining the nematic liquid crystal [*e.g., Fig. 12: 16, 17*],

a pair of polarizing plates sandwiching the electrodes [*e.g., Column 15, Lines 20-30; Column 17, Lines 10-20*]; wherein

a unit period being less than or equal to eight milliseconds [*e.g., Column 14, Line 47*]; and wherein

a first absolute voltage [*e.g., Fig. 14: (+), (-)*] consists of

a first positive voltage [*e.g., +20 volts -- Column 18, Line 60*] and

a first negative voltage [*e.g., -20 volts -- Column 18, Line 60*] and

the sum of the first positive voltage and the first negative voltage in the unit period is zero volts (*see the entire document, including Column 17, Line 45 - Column 19, Line 45*).

Should it be shown that both ***Hiroki*** and ***Mase*** disclose a first absolute voltage, as instantly claimed, with insufficient specificity:

Takemura discloses that it was well known and commonly understood at the time of invention to replace a counter/opposing electrode offset voltage level with a zero/ground voltage level (*see the entire document, including Fig. 3; Column 2, Lines 5-30*).

Hiroki, ***Mase***, and ***Takemura*** are all analogous art, because they are from the shared inventive field of driving liquid crystal displays.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use ***Mase's*** polarizing plate arrangement to form ***Hiroki's*** liquid crystal element [*e.g., Fig. 10: 115*] -- so as to form a commercially popular transmissive LCD;

use ***Mase's*** sub-8 millisecond frame period as ***Hiroki's*** frame period [*e.g., Fig. 9: Frame*] -- so as to provide a quick frame rate resulting in a smooth display of full motion video;

use ***Mase's*** ±20 volt positive/negative voltages as ***Hiroki's*** positive/negative voltages [*e.g., Fig. 9:* V_{DD} *&* V_{SS}] -- so as to prevent deterioration of the LCD via polarity reversal and drive the pixel with appropriate voltage levels; and

use ***Takemura's*** zero voltage opposed electrode level as ***Hiroki's*** opposed electrode voltage level [*e.g., Fig. 9:opposed electrode*] -- so as to provide a well known and commonly understood opposed electrode level voltage substitution.

It would have been obvious to one of ordinary skill in the art at the time of invention, because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp (*i.e., using polarizers, driving the display at a fast frame rate; reversing the polarity of drive signals; and applying a zero/ground voltage level to the opposing electrode of the LCD pixel*). If this leads to the anticipated success, it is likely the product is not of innovation but of ordinary skill and common sense.

Regarding claim 25, ***Hiroki*** discloses the level corresponding to the second voltage is white or black [*e.g., Fig. 2: 0 volts = 0% transmissivity = black*].

Regarding claim 32, ***Hiroki*** discloses said nematic liquid crystal is a twisted nematic liquid crystal [*e.g., see Column 3, Line 68; Column 9, Line 16*].

Regarding claim 21, ***Hiroki*** discloses the liquid crystal display device is a TFT liquid crystal display device [*e.g., Fig. 10: 113, 122*].

Regarding claim 10, ***Hiroki*** discloses the voltage applied in the second time period of the unit period erases an image on the panel by darkening the TFT liquid crystal panel to black during the second time period [*e.g., Fig. 2: 0 volts = 0% transmissivity = black*].

Regarding claim 3, ***Hiroki*** discloses the second voltage applied in the second time period of the unit period erases an image on the panel during the second time period [*e.g., Fig. 2: 0 volts = 0% transmissivity = black*].

Regarding claim 4, ***Hiroki*** discloses erasure of the image displayed on the panel is effected by driving the nematic liquid crystal to display black on the panel [*e.g., Fig. 2: 0 volts = 0% transmissivity = black*].

Regarding claim 7, ***Hiroki*** discloses the liquid crystal display device is normally black and the second voltage is zero volts [*e.g., Fig. 2: 0 volts = 0% transmissivity = black*].

Regarding claim 26, this claim is rejected by the reasoning applied in rejecting claims 20, 22, and 23; furthermore, ***Hiroki*** discloses a method for driving a nematic liquid crystal [*e.g., Fig. 10: 115*] in a liquid crystal display device [*e.g., Fig. 10*] comprising

the nematic liquid crystal [*e.g., see Column 3, Line 68; Column 9, Line 16*],

two electrodes [*e.g., Fig. 10: 116, 117*] sandwiching the nematic liquid crystal,

two polarizing plates [*e.g., inherent for a transmissive LCD*] sandwiching the two electrodes and

a matrix liquid crystal panel [*e.g., Figs. 10, 12, 13: 123 matrix*] with the nematic liquid crystal,

consisting of the steps of:

applying a first absolute voltage [*e.g., Fig. 9: Liquid Crystal Potential* = $V_{DD} + V_{SS}$] corresponding to image data [*e.g., image gradation level*] to the nematic liquid crystal during a first time period [*e.g., Fig. 9: write-in unit time t, 325*] in a unit period [*e.g., Fig. 9: 1 Frame*]; and

applying a second absolute voltage [*e.g., Fig. 9: Liquid Crystal Potential = electrical ground, GND*] that does not correspond to the image data to the nematic liquid crystal during a second time period [*e.g., Fig. 9: Frame - t = non-write-in time*] in the unit period,

wherein the unit period consists of the first time period and the second time period, and

the optical transmittance of the nematic liquid crystal changes from an initial level corresponding to the second absolute voltage to a level corresponding to the image data during the first time period and

changes from a level corresponding to the image data to the initial level corresponding to the second absolute voltage during the second time period [*e.g., Fig. 9: wherein Electrical Potential Applied to a Pixel starts and ends at the same voltage level for each frame; see also Fig. 2: applied voltage versus LC transmissivity*], and

the first absolute voltage consists of

a first positive voltage [*e.g., Fig. 9:* V_{DD}] and

a first negative voltage [*e.g., Fig. 9:* V_{SS}],

the sum of the first positive voltage and the first negative voltage is zero volts in the unit period, and

the matrix liquid crystal panel is an active matrix liquid crystal panel [*e.g., Fig. 10: via 113, 122*] (*see the entire document, including Column 2, Line 40 - Column 4, Line 5; Column 5, Line 40 - Column 11, Line 56*).

Should it be shown that ***Hiroki*** discloses a first absolute voltage, as instantly claimed, with insufficient specificity:

Mase discloses a liquid crystal display device [*e.g., Fig. 12*] that includes

a twisted nematic liquid crystal [*e.g., Column 1, Lines 15-35; Column 13, Line 39*],

two electrodes confining the nematic liquid crystal [*e.g., Fig. 12: 16, 17*],

a pair of polarizing plates sandwiching the electrodes [*e.g., Column 15, Lines 20-30; Column 17, Lines 10-20*]; wherein

a unit period being less than or equal to eight milliseconds [*e.g., Column 14, Line 47*]; and wherein

a first absolute voltage [*e.g., Fig. 14: (+), (-)*] consists of

a first positive voltage [*e.g., +20 volts -- Column 18, Line 60*] and

a first negative voltage [*e.g., -20 volts -- Column 18, Line 60*] and

the sum of the first positive voltage and the first negative voltage in the unit period is zero volts (*see the entire document, including Column 17, Line 45 - Column 19, Line 45*).

Should it be shown that both ***Hiroki*** and ***Mase*** disclose a first absolute voltage, as instantly claimed, with insufficient specificity:

Takemura discloses that it was well known and commonly understood at the time of invention to replace a counter/opposing electrode offset voltage level with a zero/ground voltage level (*see the entire document, including Fig. 3; Column 2, Lines 5-30*).

Hiroki, ***Mase***, and ***Takemura*** are all analogous art, because they are from the shared inventive field of driving liquid crystal displays.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use ***Mase's*** polarizing plate arrangement to form ***Hiroki's*** liquid crystal element [*e.g., Fig. 10: 115*] -- so as to form a commercially popular transmissive LCD;

use ***Mase's*** sub-8 millisecond frame period as ***Hiroki's*** frame period [*e.g., Fig. 9: Frame*] -- so as to provide a quick frame rate resulting in a smooth display of full motion video;

use ***Mase's*** ±20 volt positive/negative voltages as ***Hiroki's*** positive/negative voltages [*e.g., Fig. 9:* V_{DD} *&* V_{SS}] -- so as to prevent deterioration of the LCD via polarity reversal and drive the pixel with appropriate voltage levels; and

use ***Takemura's*** zero voltage opposed electrode level as ***Hiroki's*** opposed electrode voltage level [*e.g., Fig. 9:opposed electrode*] -- so as to provide a well known and commonly understood opposed electrode level voltage substitution.

It would have been obvious to one of ordinary skill in the art at the time of invention, because a person of ordinary skill has good reason to pursue the known options within his or her technical grasp (*i.e., using polarizers, driving the display at a fast frame rate; reversing the polarity of drive signals; and applying a zero/ground voltage level to the opposing electrode of the LCD pixel*). If this leads to the anticipated success, it is likely the product is not of innovation but of ordinary skill and common sense.

Regarding claim 29, ***Hiroki*** discloses the liquid crystal display device is normally black and the second absolute voltage is zero volts [*e.g., Fig. 2: 0 volts = 0% transmissivity = black*].

Regarding claim 30, ***Hiroki*** discloses the liquid crystal display device is a TFT liquid crystal display device [*e.g., Fig. 10: 113, 122*] including a plurality of pixels [*e.g., Figs. 10, 12, 13: 123*].

Regarding claim 31, ***Hiroki*** discloses the level corresponding to the second absolute voltage is white or black [*e.g., Fig. 2: 0 volts = 0% transmissivity = black*].

Regarding claim 35, ***Hiroki*** discloses said nematic liquid crystal is a twisted nematic liquid crystal [*e.g., see Column 3, Line 68; Column 9, Line 16*].

Regarding claim 27, ***Hiroki*** discloses the second absolute voltage applied in the second time period of the unit period erases an image on the panel during the second time period [*e.g., Fig. 2: 0 volts = 0% transmissivity = black*].

Regarding claim 28, ***Hiroki*** discloses erasure of the image displayed on the panel is effected by driving the nematic liquid crystal to display black on the panel [*e.g., Fig. 2: 0 volts = 0% transmissivity = black*].

5. *Claims 15, 22-24, 33, and 34* are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Koden (US 5,323,172 A)***.

Regarding claim 15, ***Koden*** discloses the unit period is less than or equal to eight milliseconds [*200 μsec*] (*Column 2, Lines 49 - Column 3, Line 9*).

Regarding claim 22, ***Koden*** discloses an image display method [*Fig. 5*] for a liquid crystal display device [*Fig. 3*] including

a matrix liquid crystal panel (*Column 2, Lines 25-37*) with a liquid crystal [*Fig. 3: LC*] (*Column 1, Line 21 and Column 2, Lines 25-37*), consisting of the steps of:

applying a first absolute voltage [*Fig. 5: "voltage applied to liquid crystal" = absolute value of 5 volts*] corresponding to the image data to the nematic liquid crystal during a first time

period [*Fig. 5: t_0*] in a unit period [*Fig. 5: time period from a first gate electrode pulse start/rise to the next gate electrode pulse start/rise*]; and

applying a second absolute voltage having a potential [*Fig. 5: "voltage applied to liquid crystal" = absolute value of 0 volts*] and that does not correspond to the image data to the liquid crystal in a second time period [*Fig. 5: time period from the first gate electrode pulse end/fall to the next gate electrode pulse start/rise*] different from the first time period in the unit period (*Column 2, Lines 49 - Column 3, Line 9*), wherein

the matrix liquid crystal panel is an active matrix liquid crystal panel (*Column 2, Lines 20-23*).

Although ***Koden*** teaches applying the driving method shown in Figure 5 to a ferroelectric liquid crystal (*Column 2, Line 55*), ***Koden*** also teaches that a twisted nematic liquid crystal can be substituted in the place of a ferroelectric liquid crystal (*Column 1, Lines 13-42 and Column 13, Lines 38-59*).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to apply the driving method shown in Figure 5 to a twisted nematic liquid crystal, so as to result in a display device of high quality [***Koden***: *Column 1, Lines 13-23*]. Additionally, it would have been obvious because the substitution of one known liquid crystal material for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Regarding claim 23, this claim is rejected by the reasoning applied in rejecting claim 22; furthermore, ***Koden*** discloses a method [*Fig. 5*] for driving a liquid crystal [*Fig. 3: LC*] in a liquid crystal display device [*Fig. 3*] that includes the liquid crystal (*Column 1, Line 21 and Column 2, Lines 25-37*),

two electrodes [*Fig. 3: 8, 11*] confining the liquid crystal [*Fig. 10: 13*],

a pair of polarizing plates sandwiching the electrodes and a matrix liquid crystal panel with the liquid crystal (*Column 2, Lines 9-20; Column 4, Lines 3-25*), consisting of the steps of:

applying a first absolute voltage [*Fig. 5: "voltage applied to liquid crystal" = absolute value of 5 volts*] corresponding to image data to the liquid crystal during a first time period [*Fig. 5:* t_0] in a unit period [*Fig. 5: time period from a first gate electrode pulse start/rise to the next gate electrode pulse start/rise*]; and

applying a second absolute voltage [*Fig. 5: "voltage applied to liquid crystal" = absolute value of 0 volts*] not corresponding to the image data to the liquid crystal during a second separate time period [*Fig. 5: time period from the first gate electrode pulse end/fall to the next gate electrode pulse start/rise*] in the unit period (*Column 2, Lines 49 - Column 3, Line 9*), wherein

the unit period includes a separate first input [*Fig. 5: "voltage applied to liquid crystal" during* t_0] of the first absolute voltage,

a second input [*Fig. 5: "voltage applied to liquid crystal" outside* t_0] of the second absolute voltage and

the optical transmittance [*Fig. 5: "amount of transmitted light"*] of the liquid crystal returns to or remains at an original level during the unit period and

the matrix liquid crystal panel is an active matrix liquid crystal panel (*Column 2, Lines 20-23*).

Regarding claim 24, ***Koden*** discloses the first absolute voltage consists of a first positive voltage [*Fig. 5: +5 volts during the first 1/3*t_0] and a first negative voltage [*Fig. 5: -5 volts during the second 1/3*t_0] and

the sum of the first positive voltage and the first negative voltage in the unit period is zero volts (*Column 2, Lines 49 - Column 3, Line 9*).

Regarding claim 33, ***Koden*** discloses said nematic liquid crystal is a twisted nematic liquid crystal (*Column 1, Line 21 and Column 2, Lines 25-37*).

Regarding claim 34, this claim is rejected by the reasoning applied in rejecting claim 33.

6. *Claims 3, 4, 7, 10, 20, 21, 25-32, and 35* are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Koden (US 5,323,172 A)*** in view of ***Handschy et al (US 5,748,164 A)***.

Regarding claim 3, ***Handschy*** discloses the second voltage [*0 volts*] applied in the second time period [*Fig. 8: SB*] of the unit period [*Fig. 8: S1 + SB*] erases an image [*Fig. 8: Pixel State = OFF = dark*] on the panel during the second time period [*Fig. 8: S1 + SB*] (*Column 15, Lines 8-58*).

Regarding claim 4, ***Handschy*** discloses erasure of the image displayed on the panel is effected by driving the nematic liquid crystal to display black [*Fig. 8: Pixel State = OFF = black*] on the panel (*Column 15, Lines 8-58*).

Regarding claim 7, ***Koden*** discloses the liquid crystal display device is normally black and the second voltage is zero volts (*Column 2, Lines 49 - Column 3, Line 9*).

Handschy also discloses the liquid crystal display device is normally black and the second voltage is zero volts (*Column 9, Lines 36-67*).

Regarding claim 10, ***Handschy*** discloses the voltage [*0 volts*] applied in the second time period [*Fig. 8: SB*] of the unit period [*Fig. 8: S1 + SB*] erases an image on the panel by darkening the TFT liquid crystal panel to black [*Fig. 8: Pixel State = OFF = dark = black*] during the second time period (*Column 15, Lines 8-58*).

Regarding claim 20, this claim is rejected by the reasoning applied in rejecting claims 22 and 23; furthermore, ***Koden*** discloses a method [*Fig. 5*] for driving a liquid crystal [*Fig. 3: LC*] in a liquid crystal display device [*Fig. 3*] comprising

the liquid crystal (*Column 1, Line 21 and Column 2, Lines 25-37*),

two electrodes [*Fig. 3: 8, 11*] sandwiching the liquid crystal [*Fig. 10: 13*],

two polarizing plates sandwiching the two electrodes (*Column 2, Lines 9-20; Column 4, Lines 3-25*) and

a matrix liquid crystal panel [*Fig. 3*] with the liquid crystal, consisting of the steps of:

applying a first voltage [*Fig. 5: "voltage applied to liquid crystal" = absolute value of 5 volts*] corresponding to image data to the nematic liquid crystal during a first time period [*Fig. 5: t_0*] in a unit period [*Fig. 5: time period from a first gate electrode pulse start/rise to the next gate electrode pulse start/rise*]; and

applying a second voltage [*Fig. 5: "voltage applied to liquid crystal" = absolute value of 0 volts*] that does not correspond to image data to the nematic liquid crystal during a second time period [*Fig. 5: time period from the first gate electrode pulse end/fall to the next gate electrode pulse start/rise*] in the unit period, wherein

the unit period consists of the first time period and the second time period, and

the optical transmittance [*Fig. 5: "amount of transmitted light"*] of the liquid crystal changes from an initial level [*Fig. 5: "amount of transmitted light" starts low, prior to t_0*] corresponding to the second voltage to a level [*Fig. 5: "amount of transmitted light" goes high responsive to the "voltage applied to liquid crystal" pulse during t_0*] corresponding to the image data during the first time period (*Column 2, Lines 49 - Column 3, Line 9*) and

the matrix liquid crystal panel is an active matrix liquid crystal panel (*Column 2, Lines 20-23*).

Koden neglects to expressly disclose changing from the level corresponding to image data to the initial level corresponding to the second voltage during the second time period.

Such a light transmission response is likely due to ***Koden's*** use of ferroelectric liquid crystal (*Column 2, Line 55*) -- which exhibits a "*memory effect*" (*Column 2, Line 2*).

Substituting ***Koden's*** twisted nematic liquid crystal in the place of ferroelectric liquid crystal (*Column 1, Lines 13-42 and Column 13, Lines 38-59*), should result in the amount of transmitted light changing back to the initial level after the "voltage applied to liquid crystal" pulse resets to zero volts [*Fig. 5: when period t_0 ends*].

However, should it be shown that ***Koden*** teaches such an optical transmittance response with insufficient specificity:

Handschy discloses a method for driving a nematic liquid crystal (*Column 18, Lines 36-44*) in a liquid crystal display device [*Fig. 4*] comprising

applying a first voltage [*5 volts*] (*Column 9, Lines 36-67*) corresponding to image data to the nematic liquid crystal during a first time period [*Fig. 8: S1*] in a unit period [*Fig. 8: S1 + SB*]; and

applying a second voltage [*0 volts*] that does not correspond to the image data to the nematic liquid crystal during a second time period [*Fig. 8: SB*] in the unit period, wherein

the unit period consists of the first time period and the second time period [*Fig. 8: S1 + SB*], and

the optical transmittance of the nematic liquid crystal changes from an initial level [*Fig. 8: Pixel State = OFF = dark*] corresponding to the second voltage to a level [*Fig. 8: Pixel State = ON = bright*] corresponding to the image data during the first time period and

changes from the level [*Fig. 8: Pixel State = ON = bright*] corresponding to the image data to the initial level [*Fig. 8: Pixel State = OFF = dark*] corresponding to the second voltage during the second time period (*Column 15, Lines 8-58*), and

the matrix liquid crystal panel is an active matrix liquid crystal panel [*Fig. 4*] (*Column 8, Line 61 - Column 9, Line 23*).

Koden and ***Handschy*** are analogous art, because they are from the shared inventive field of driving methods applicable to both ferroelectric liquid crystal and twisted nematic liquid crystal displays (***Koden****: Column 1, Lines 13-42 and Column 13, Lines 38-59* & ***Handschy****: Column 18, Lines 36-44*).

Therefore, it would have been obvious to one having ordinary skill in the art to use ***Handschy's*** blackout technique between ***Koden's*** voltage pulse applications to the gate/source electrodes, so as to maintain proper brightness levels during image display (***Handschy****: Column 15, Lines 30-58*).

Regarding claim 21, ***Koden*** discloses the liquid crystal display device is a TFT liquid crystal display device (*Fig. 3; Column 2, Lines 25-37*).

Regarding claim 25, ***Koden*** discloses the level corresponding to the second voltage is white [*Fig. 5: "amount of transmitted light" = high = white*] or black [*Fig. 5: "amount of transmitted light" = low = black*] (*Column 2, Lines 49 - Column 3, Line 9*).

Regarding claim 26, this claim is rejected by the reasoning applied in rejecting claims 20 and 22-24; furthermore, ***Koden*** discloses a method [*Fig. 5*] for driving a liquid crystal [*Fig. 3: LC*] in a liquid crystal display device [*Fig. 3*] comprising

the liquid crystal (*Column 1, Line 21 and Column 2, Lines 25-37*),

two electrodes [*Fig. 3: 8, 11*] sandwiching the liquid crystal [*Fig. 10: 13*],

two polarizing plates sandwiching the two electrodes (*Column 2, Lines 9-20; Column 4, Lines 3-25*) and

a matrix liquid crystal panel [*Fig. 3*] with a liquid crystal, consisting of the steps of:

applying a first absolute voltage [*Fig. 5: "voltage applied to liquid crystal" = absolute value of 5 volts*] corresponding to image data to the liquid crystal during a first time period [*Fig. 5: t_0*] in a unit period [*Fig. 5: time period from a first gate electrode pulse start/rise to the next gate electrode pulse start/rise*]; and

applying a second absolute voltage [*Fig. 5: "voltage applied to liquid crystal" = absolute value of 0 volts*] that does not correspond to the image data to the liquid crystal during a second time period [*Fig. 5: time period from the first gate electrode pulse end/fall to the next gate electrode pulse start/rise*] in the unit period, wherein

the unit period consists of the first time period and the second time period, and

the optical transmittance [*Fig. 5: "amount of transmitted light"*] of the liquid crystal changes from an initial level [*Fig. 5: "amount of transmitted light" starts low, prior to t_0*] corresponding to the second absolute voltage to a level [*Fig. 5: "amount of transmitted light" goes high responsive to the "voltage applied to liquid crystal" pulse during t_0*] corresponding to the image data during the first time period and

the first absolute voltage consists of a first positive voltage [*Fig. 5: +5 volts during the first 1/3t_0*] and a first negative voltage [*Fig. 5: -5 volts during the second 1/3t_0*],

the sum of the first positive voltage and the first negative voltage is zero volts in the unit period (*Column 2, Lines 49 - Column 3, Line 9*), and

the matrix liquid crystal panel is an active matrix liquid crystal panel (*Column 2, Lines 20-23*).

Regarding claim 27, this claim is rejected by the reasoning applied in rejecting claim 3.

Regarding claim 28, this claim is rejected by the reasoning applied in rejecting claim 4.

Regarding claim 29, this claim is rejected by the reasoning applied in rejecting claim 7.

Regarding claim 30, ***Koden*** discloses the liquid crystal display device is a TFT liquid crystal display device including a plurality of pixels (*Fig. 3; Column 2, Lines 25-37*).

Regarding claim 31, this claim is rejected by the reasoning applied in rejecting claim 25.

Regarding claim 32, this claim is rejected by the reasoning applied in rejecting claim 33.

Regarding claim 35, this claim is rejected by the reasoning applied in rejecting claim 33.

Response to Arguments

7. Applicant's arguments filed on *30 November 2009* have been fully considered but they are not persuasive.

The Applicant contends, "*Koden does not apply the absolute voltage to the liquid crystal. In addition, Koden does not disclose that the voltage is corresponding to the image data... Koden uses both negative and positive voltages rather than the absolute voltage*" (see Pages 10-11 of the Response filed on *30 November 2009*). However, the examiner respectfully disagrees.

Koden discloses applying a first absolute voltage [*Fig. 5: "voltage applied to liquid crystal" = absolute value of 5 volts*] corresponding to image data [*e.g., wherein the applied voltage inherently corresponds to image data, as it creates an image on the display*] to the liquid crystal during a first time period [*Fig. 5:* t_0] in a unit period [*Fig. 5: time period from a first gate electrode pulse start/rise to the next gate electrode pulse start/rise*]; wherein

the first absolute voltage [*Fig. 5: "voltage applied to liquid crystal" = absolute value of 5 volts*] consists of a first positive voltage [*Fig. 5: +5 volts during the first* $1/3t_0$] and a first negative voltage [*Fig. 5: -5 volts during the second* $1/3t_0$] and the sum of the first positive voltage and the first negative voltage in the unit period is zero volts (*Column 2, Lines 49 - Column 3, Line 9*), as recited in instant claim 24, and as illustrated as "applied voltage" in the instant invention's Figure 1.

The Applicant contends, "*Koden does not disclose that the optical transmittance of the nematic liquid crystal returns to or remains at an original level during the unit period*" (see Page 11 of the Response filed on *30 November 2009*). However, the examiner respectfully disagrees.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Koden neglects to expressly disclose changing from the level corresponding to image data to the initial level corresponding to the second voltage during the second time period.

Such a light transmission response is likely due to ***Koden's*** use of ferroelectric liquid crystal (*Column 2, Line 55*) -- which exhibits a "*memory effect*" (*Column 2, Line 2*).

Substituting ***Koden's*** twisted nematic liquid crystal in the place of ferroelectric liquid crystal (*Column 1, Lines 13-42 and Column 13, Lines 38-59*), should result in the amount of transmitted light changing back to the initial level after the "voltage applied to liquid crystal" pulse resets to zero volts [*Fig. 5: when period t_0 ends*].

However, should it be shown that ***Koden*** teaches such an optical transmittance response with insufficient specificity:

Handschy discloses a method for driving a nematic liquid crystal (*Column 18, Lines 36-44*) in a liquid crystal display device [*Fig. 4*] comprising

applying a first voltage [*5 volts*] (*Column 9, Lines 36-67*) corresponding to image data to the nematic liquid crystal during a first time period [*Fig. 8: S1*] in a unit period [*Fig. 8: S1 + SB*]; and

applying a second voltage [*0 volts*] that does not correspond to the image data to the nematic liquid crystal during a second time period [*Fig. 8: SB*] in the unit period, wherein

the unit period consists of the first time period and the second time period [*Fig. 8: S1 + SB*], and

the optical transmittance of the nematic liquid crystal changes from an initial level [*Fig. 8: Pixel State = OFF = dark*] corresponding to the second voltage to a level [*Fig. 8: Pixel State = ON = bright*] corresponding to the image data during the first time period and

changes from the level [*Fig. 8: Pixel State = ON = bright*] corresponding to the image data to the initial level [*Fig. 8: Pixel State = OFF = dark*] corresponding to the second voltage during the second time period (*Column 15, Lines 8-58*), and

the matrix liquid crystal panel is an active matrix liquid crystal panel [*Fig. 4*] (*Column 8, Line 61 - Column 9, Line 23*).

The Applicant contends, "*Koden discloses that the pulse width necessary for the switching is 200 μsec, but does not teach that the unit period is less than or equal to eight milliseconds*" (see Page 12 of the Response filed on *30 November 2009*). However, the examiner respectfully disagrees.

Koden discloses the unit period is less than or equal to eight milliseconds [*200 μsec*] (*Column 2, Lines 49 - Column 3, Line 9*).

It is respectfully noted that 200 μsec is a good deal shorter than eight milliseconds.

The Applicant contends, "*Handschy does not disclose that optical transmittance changes from an initial level corresponding to the second voltage to a level corresponding to the image data during the first time period and changes from the level corresponding to the image data to the initial level corresponding to the second voltage during the second time period. In addition, in Figure 8 of Handschy, the brightness changes depending on the subframes rather than on the time period. Moreover, the brightness level of Handschy does not correspond to the image data or to the voltage*" (see Page 13 of the Response filed on *30 November 2009*). However, the examiner respectfully disagrees.

As respectfully pointed out above, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Koden neglects to expressly disclose changing from the level corresponding to image data to the initial level corresponding to the second voltage during the second time period.

Such a light transmission response is likely due to ***Koden's*** use of ferroelectric liquid crystal (*Column 2, Line 55*) -- which exhibits a "*memory effect*" (*Column 2, Line 2*).

Substituting ***Koden's*** twisted nematic liquid crystal in the place of ferroelectric liquid crystal (*Column 1, Lines 13-42 and Column 13, Lines 38-59*), should result in the amount of transmitted light changing back to the initial level after the "voltage applied to liquid crystal" pulse resets to zero volts [*Fig. 5: when period* t_0 *ends*].

However, should it be shown that ***Koden*** teaches such an optical transmittance response with insufficient specificity:

Handschy discloses a method for driving a nematic liquid crystal (*Column 18, Lines 36-44*) in a liquid crystal display device [*Fig. 4*] comprising

applying a first voltage [*5 volts*] (*Column 9, Lines 36-67*) corresponding to image data to the nematic liquid crystal during a first time period [*Fig. 8: S1*] in a unit period [*Fig. 8: S1 + SB*]; and

applying a second voltage [*0 volts*] that does not correspond to the image data to the nematic liquid crystal during a second time period [*Fig. 8: SB*] in the unit period, wherein

the unit period consists of the first time period and the second time period [*Fig. 8: S1 + SB*], and

the optical transmittance of the nematic liquid crystal changes from an initial level [*Fig. 8: Pixel State = OFF = dark*] corresponding to the second voltage to a level [*Fig. 8: Pixel State = ON = bright*] corresponding to the image data during the first time period and

changes from the level [*Fig. 8: Pixel State = ON = bright*] corresponding to the image data to the initial level [*Fig. 8: Pixel State = OFF = dark*] corresponding to the second voltage during the second time period (*Column 15, Lines 8-58*), and

the matrix liquid crystal panel is an active matrix liquid crystal panel [*Fig. 4*] (*Column 8, Line 61 - Column 9, Line 23*).

Moreover, each of ***Handschy's*** subframes inherently constitutes a time period.

Additionally, ***Handschy*** expressly teaches, "*By controlling each of the pixels in this way the overall array of pixels may be used to form an image consisting of bright or dark pixels at any given time*" (*see Column 9, Lines 64-67*)

The Applicant contends, "*Koden and Handschy do not teach the erasure of the image*" (see Page 14 of the Response filed on *30 November 2009*). However, the examiner respectfully disagrees.

Handschy does indeed disclose that erasure of the image displayed on the panel is effected by driving the nematic liquid crystal to display black [*Fig. 8: Pixel State = OFF = black*] on the panel (*Column 15, Lines 8-58*). For example: in a black pixel state, no image can possibly be displayed.

Applicant's arguments with respect to *claims 3, 4, 7, 10, 15, and 20-25* have been considered but are moot in view of the new ground(s) of rejection.

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Piziali/
Primary Examiner, Art Unit 2629
28 March 2010